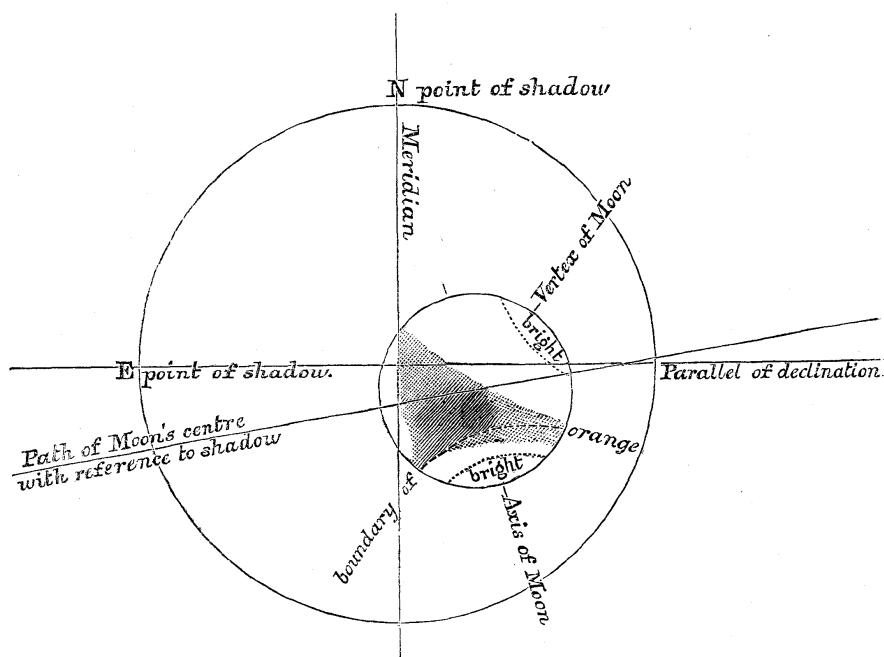


The Total Eclipse of the Moon, 1888, January 28.

By T. W. Backhouse.

(Abstract.)

The general appearance was very much the same as in the total eclipse of 1866, March 30—perhaps a more brilliant orange, the greater part of the shadow being of that colour, while the border was yellow, and the extreme edge white, if not bluish. The total light of the Moon was least about the middle of the eclipse, at which time, as seen out of focus through an opera-glass reversed, and by indirect vision, it appeared to be two-thirds as bright as *Saturn*, and about two and a half times as bright as *Pollux*. At 10.50 it was twice as bright as *Saturn*.



At 10.52 the lower half of the Moon, with the exception of those portions towards the right-hand and the left-hand parts of the lower limb, seemed abnormally dark, the darkest part being a little south of the centre. I send a drawing of this abnormal darkness, as well as I could ascertain it apart from the lunar features, showing its position in the Earth's shadow. It was difficult to separate the abnormal darkness from the lunar features, and it is quite likely that the extreme darkness of the portion near the middle was partly due to Mare Nubium, though unfortunately I did not record its exact position relative thereto. The brightness of the lower left-hand limb was probably due to the lunar features and not to any difference in the intensity of

the Earth's shadow at that part. The actually brightest portions of the Moon were those two marked with the dotted lines, viz. the lower right-hand portion, and the upper portion between Mare Tranquillitatis and the limb. As the region between these two parts was that nearest the edge of the Earth's shadow, I conclude that the abnormal darkness really extended right across the Moon, mainly in a broad irregular belt from position-angle 250° to 130° .

There was also a difference in colour between the northern and southern parts of the right limb not to be accounted for by the distance from the edge of the shadow, there being no tinge of orange but only yellow in the south preceding part marked off by the broken line, while all the rest of the disc was orange.

I noted the occultation of a bright star at $10^h 38^m 51^s$ (with a possible error of about 1 second or perhaps 2 seconds); it disappeared instantaneously at position-angle about 110° .

Sunderland: 1888, February 27.

The Total Eclipse of the Moon, 1888, January 28.

By W. F. Denning.

(Abstract.)

This phenomenon was observed at Bristol under the best possible conditions of weather. The sky was cloudless the whole time.

As soon as the umbra had well entered upon the Moon's limb I observed that it was not nearly so dark as in the eclipse of 1884, October 4. On that occasion during the partial phase I could not discern the outline of the Moon at all in my 10-inch reflector until near the period of totality, when it became feebly perceptible. But in the present instance the immersed limb was very obvious, and it could be distinguished with the naked eye, especially after 10^h , the appearance being very similar to what is observed near the time of new moon, when our satellite is faintly visible in full outline by the effects of earthshine.

The total phase was reached at $10^h 31^m$, and now the Moon's disc displayed a vivid extent of colouring. The entire surface remained distinctly perceptible to the naked eye, the brightest coppery hues being upon the upper limb where the outer limits of the shadow fell. The interior parts were suffused in a red glow of varying depth. At the middle of totality the darkest tints were near the Moon's centre, while the marginal zone was quite bright by contrast, and enabled the globe of our satellite to be sharply defined upon the background of dark sky. On October 4, 1884, the central part was much the brightest at the middle of the eclipse, while the extreme faintness of the outer